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EXAMINER	
SHEW, JOHN	
ART UNIT	**PAPER NUMBER**
2664	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/770,858	GERAKOULIS, DIAKOUMIS PARISSIS	
	Examiner	Art Unit	
	John L Shew	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *36-49, 51-67, 69, 71-73* is/are rejected.

7)☒ Claim(s) *50,68 and 70* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2,4*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 71 and 72 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 53 and 54 of copending Application No. 09/770890. Although the conflicting claims are not identical, they are not patentably distinct from each other because the system of claims 71 and 72 are functionality equal to the method of application 09/770890 claims 53 and 54.

Claim 71 cites "A code division switching system used for interfacing a terrestrial wireless network with a core network, where said wireless network interfaces with a plurality of wireless terminal users, comprising:".

Appplication 09/770890 claim 53 cites "A method for code division switching used for interfacing a terrestrial wireless network with a network, where said wireless network interfaces with a plurality of wireless terminal users, comprising the steps of:". The "core network" is identical to the "network" of application 09/770890 claim 53.

Claim 71 cites

"means for spreading a transmission signal by a PN-code assigned to an intended receiving port;

means for inserting an identifier of a few bits for identifying a user;

means for spreading payload data by an orthogonal code;

means for spreading the orthogonal spread payload data signal by the PN-code identifying the user with payload data;

means for forwarding, at the originating terminal, said PN-code spread transmission signal and said twice spread payload data signal to an access radio port;

means for despreading, at an originating access radio port, the transmission signal by orthogonal code assignments to recover microport groupings and route said microport groupings accordingly;

means for translating, at the originating access radio port, the orthogonal code assignments to a packet address identifying a destination microport augmented to identify a destination access node;

means for downconverting, at the originating access radio port, to an intermediate frequency;

means for depositing, at the originating access radio port, said despread transmission signal into a packet with said packet address;

means for transmitting, from the originating access radio port, said packet to an originating access node for further transmission over a network;

means for receiving, at a destination access radio port, said packet switched transmission signal from a destination access node via a core network;

means for translating a packet address into an orthogonal code sequence;

means for respreading said orthogonal code sequence into a transmission signal at an intermediate frequency;

means for upconverting said respread transmission signal; and

means for transmitting said respread upconverted transmission signal over the air to a destination terminal user."

Application 09/770890 claim 53 cites

"spreading a transmission signal by a PN-code assigned to an intended receiving port;

inserting an identifier of a few bits for identifying a user;

spreading payload data by an orthogonal code;

spreading the orthogonal spread payload data signal by the PN-code identifying the user with payload data;

forwarding, at the originating terminal, said PN-code spread transmission signal and said twice spread payload data signal to an access radio port;

despreading, at an originating access radio port, the transmission signal by orthogonal code assignments to recover microport groupings and route said microport groupings accordingly;

translating, at the originating access radio port, the orthogonal code assignments to a packet address identifying a destination microport augmented to identify a destination access node;

downconverting, at the originating access radio port, to an intermediate frequency;

depositing, at the originating access radio port, said despread transmission signal into a packet with said packet address;

transmitting, from the originating access radio port, said packet to an originating access node for further transmission over a network;

receiving, at a destination access radio port, said packet switched transmission signal from a destination access node via a core network;

translating a packet address into an orthogonal code sequence;

respreading said orthogonal code sequence into a transmission signal at an intermediate frequency;

upconverting said respread transmission signal; and

transmitting said respread upconverted transmission signal over the air to a destination terminal user."

The "means" of claim 71 are identical in function to the "steps" of application 09/770890 claim 53. It would have been obvious to implement the steps in a means apparatus.

Claim 72 cites "A code division switching system used for interfacing a terrestrial wireless network with a core network, where said wireless network interfaces with a plurality of wireless terminal users, comprising the steps of:".

Appplication 09/770890 claim 54 cites "A method for code division switching used for interfacing a terrestrial wireless network with a core network, where said wireless network interfaces with a plurality of wireless terminal users, comprising the steps of:".

Claim 72 cites

"means for spreading a transmission signal by a PN-code assigned to an intended receiving port;

means for inserting an identifier of a few bits for identifying a user;

means for spreading payload data by an orthogonal code;

means for spreading the orthogonal spread payload data signal by the PN-code identifying the user with payload data;

means for forwarding, at the originating terminal, said PN-code spread transmission signal and said twice spread payload data signal to an access radio port;

means for despreading, at an originating access radio port, the transmission signal by orthogonal code assignments to recover microport groupings and route said microport groupings accordingly;

means for directing the transmission signal within the same access node according the the orthogonal code assignments;

means for downconverting, at the originating access radio port, to an intermediate frequency;

means for depositing, at the originating access radio port, said despread transmission signal into a packet with said packet address;

means for transmitting, from the originating access radio port, said packet to an originating access node for further transmission over a network;

means for receiving, at a destination access radio port, said packet switched transmission signal from a destination access node via a core network;

means for translating a packet address into an orthogonal code sequence;

means for respreading said orthogonal code sequence into a transmission signal at an intermediate frequency;

means for upconverting said respread transmission signal; and

means for transmitting said respread upconverted transmission signal over the air to a destination terminal user."

Application 09/770890 claim 54 cites

"spreading a transmission signal by a PN-code assigned to an intended receiving port;

inserting an identifier of a few bits for identifying a user;

spreading payload data by an orthogonal code;

spreading the orthogonal spread payload data signal by the PN-code identifying the user with payload data;

forwarding, at the originating terminal, said PN-code spread transmission signal and said twice spread payload data signal to an access radio port;

despreading, at an originating access radio port, the transmission signal by orthogonal code assignments to recover microport groupings and route said microport groupings accordingly;

directing the transmission signal within the same access node according to the orthogonal code assignments;

downconverting, at the originating access radio port, to an intermediate frequency;

depositing, at the originating access radio port, said despread transmission signal into a packet with said packet address;

transmitting, from the originating access radio port, said packet to an originating access node for further transmission over a network;

receiving, at a destination access radio port, said packet switched transmission signal from a destination access node via a core network;

translating a packet address into an orthogonal code sequence;

respreading said orthogonal code sequence into a transmission signal at an intermediate frequency;

upconverting said respread transmission signal; and

transmitting said respread upconverted transmission signal over the air to a destination terminal user."

The "means" of claim 72 are identical in function to the "steps" of application 09/770890 claim 54. It would have been obvious to implement the steps in a means apparatus.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 57, 60, 73, are rejected under 35 U.S.C. 102(b) as being anticipated by Yeung et al.

Claims 57, 60, Yeung teaches a system for code division packet switching (FIG. 1, column 5 lines 32-37) referenced by use of CDMA on transmit/receive signals of the wireless network, at a destination access radio port of a terrestrial wireless network

(FIG. 5A) referenced by the destination radio port Central Terminal 10, where said destination access radio port interfaces with a plurality of destination mobile subscriber terminals (FIG. 1) referenced by Central Terminal 10 interfacing with Subscriber Terminals 20, located within a microport cell (FIG. 1) referenced by Cell 16, comprising means for acquiring a preamble and a header (FIG. 8, column 11 lines 10-28) referenced by Viterbi Decoder 180 to obtain control information representative of a preamble and Overhead Extraction 182 representative of a header, which has a PN-code (FIG. 8) referenced by PN Code Generator 174, means for processing said PN-code to insure synchronization (FIG. 3A, column 5 lines 22-37) referenced by modem shelf processing spreading of CDMA codes and synchronization recovery, means for sending an acknowledgment (FIG. 1, column 12 lines 13-18) referenced by acknowledgement packets sent between the Central Terminal 10 and Subscriber Terminals 20, and means for receiving payload data (FIG. 13) referenced by extraction of the record portion 273 of the transmission packet. Yeung teaches payload data are received by despreading by a unique orthogonal code and said PN-code (FIG. 8) referenced by reception of all data and despread by Correlator 178 by RW Code Generator 172 and PN Code Generator 174.

Claim 73, Yeung teaches a system for code division switching system (FIG. 1, column 5 lines 32-37) referenced by use of CDMA on transmit/receive signals of the wireless network, at an originating terminal (FIG. 1) referenced by Subscriber Terminal 20, located at an instant of transmission within a microport cell of a terrestrial wireless (FIG.

1, FIG 5A) referenced by microport Central Terminal 10 in control of a terrestrial wireless Cell 14 where Subscriber Terminal 20 is presently located, where said network interfaces with an access radio port (FIG. 1) referenced by Central Terminal 10, comprising a first spreader for spreading a transmission signal by a PN-code assigned to an intended receiving port (FIG. 7) referenced by first spreader PN Code Generator 112, a second spreader for spreading a payload data signal by an orthogonal code assigned to a receiving terminal user to which the payload data signal is directed said payload data signal being further spread by said first spreader (FIG. 7) referenced by second spreader RW Code Generator 112 spreading the user payload data received, means for forwarding said PN-code spread transmission signal to an access radio port (FIG. 1, FIG. 7) referenced by TX Antenna 142 for forward transmission to a Central Terminal 10, means for forwarding said twice spread transmission signal to an access radio port (FIG. 1, FIG. 7) referenced by TX Antenna 142 for forward transmission to a Central Terminal 10 the twice spread data.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeung in view of Dabak.

Claim 58, Yeung teaches a CDMA terrestrial wireless network. Yeung does not teach a preamble acquired by serial/parallel circuits. Dabak teaches a preamble is acquired using a serial/parallel circuit (FIG. 6A, page 3 paragraph 0035) referenced by the use of parallel Matched Filter Circuits 600 602 604 for serial output to Viterbi decoder 616. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the matched filter circuits of Dabak to the CDMA telecommunications system of Yeung for the purpose detecting a predetermined code.

Claims 36-38, 40, 44, 46-48, 51-55, 67, are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeung in view of Gerakoulis.

Claims 36, 46, 67, Yeung teaches a system for code division packet switching (FIG. 1, column 5 lines 32-37) referenced by use of CDMA on transmit/receive signals of the wireless network, at an originating mobile subscriber terminal (FIG. 1) referenced by Subscriber Terminal 20, said originating mobile subscriber terminal being located within

a microport cell of a terrestrial wireless network at a given instant of time (FIG. 1, FIG 5A) referenced by microport Central Terminal 10 in control of a terrestrial wireless Cell 14 where Subscriber Terminal 20 is presently located, where said network interfaces with an originating access radio port (FIG. 1) referenced by Central Terminal 10, comprising means for spreading a transmission signal by a PN-code assigned to an access radio port (FIG. 6, column 7 lines 2-6) referenced by Walsh Code Spreader unit 82 prior to transmission via radio Antenna 86, means for inserting an identifier of a few bits for identifying a user (column 6 lines 65-67, column 7 lines 1-9) referenced by user signals associated to subscriber links via symbols represented by 2 data bits, means for modulating said PN-code spread transmission signal (FIG. 6) referenced by Combiner 84 which modulates the spread transmission signal, means for forwarding said modulated PN-code spread transmission and marking a time of origin of said forwarding of said modulated PN-code spread transmission signal and marking a time of origin of said forwarding of said modulated PN-code spread transmission signal (FIG. 6, FIG. 17, column 22 lines 13-14) referenced by Antenna 86 as the forwarding means with Message Class Identifier 416 as the event administrator for time marking of the events including PN-Code spread transmission signal, means for receiving an acknowledgment (column 12 lines 13-18) referenced by acknowledgement packets, within a time-out period from said originating access radio port (column 17 lines 41-43) referenced by acknowledgement timeout period, said acknowledgment comprising an assignment of an orthogonal code to said originating mobile subscriber terminal (FIG. 7) referenced by PN Code Generator 114 spreading user packets including acknowdgement packets,

means for spreading a payload data signal and an end of packet flag by said assigned orthogonal code (FIG. 7, column 11 line 26) referenced by PN Code Generator 114 spreading user data including payload data and an End Of Packet field, means for spreading the orthogonal spread payload data signal and said end of packet flag by the PN-code thereby associating the user with payload data (FIG. 7) referenced by user data feed including EOP field into Spreader 116 receiving spreading code from PN Code Generator 114, means for modulating said twice-spread payload data signal and said end of packet flag (FIG. 7) referenced by Modulator 122 from data of twice spread payload by RW Code Generator 112 and PN Code Generator 114 inclusive of EOP field, means for forwarding said modulated twice-spread payload data signal and said end of packet flag to said originating access radio port (FIG. 7) referenced by TX Antenna 142 for transmission to Central Terminal.

Yeung teaches a means for spreading a preamble by a PN-code assigned to an access radio port (FIG. 7, column 11 lines 10-28) referenced by first protocol with a packet header representative of a preamble which is then spread by a PN-Code Generator 114.

Yeung does not teach a timing adjustment. Gerakoulis teaches a timing adjustment (column 6 lines 30-39) referenced by insertion of timing jitter for timing adjustment on the uplink timing channel, means for adjusting a transmission time by said timing adjustment received from said originating access port (column 2 lines 2-5, FIG. 12, column 5 lines 56-65) referenced by propagation delay established by quantified timing marks utilized to adjust timing of uplink CDMA code transmissions.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the timing adjustment of Gerakoulis to the CDMA telecommunications system of Yeung for the purpose of synchronization.

Claims 37, 47, Yeung teaches if no acknowledgment is received from said originating access radio port within said time-out period, said modulated PN-code spread transmission signal is forwarded again (column 17 lines 41-43) referenced by acknowledgement timeout period with re-send upon expiration, marking the time origin of said forwarding again (FIG. 17, column 22 lines 13-14) referenced by the event administrator for time marking of the events.

Claims 38, 48, Yeung teaches first means for spreading by said PN-code forms a preamble, which is prepended to a packet (FIG. 7, column 11 lines 10-28) referenced by first protocol with a packet header representative of a preamble which is then spread by a PN-Code Generator 114.

Claim 40, Yeung teaches a system for code division packet switching (FIG. 1, column 5 lines 32-37) referenced by use of CDMA on transmit/receive signals of the wireless network, at an originating access radio port of a terrestrial wireless network (FIG. 5A) referenced by the Central Terminal 10, where said originating access radio port interfaces with a plurality of originating mobile subscriber terminals (FIG. 1) referenced by Central Terminal 10 interfacing with Subscriber Terminals 20, located within a

microport cell of said terrestrial wireless network (FIG. 1) referenced by Cell 14, comprising means for demodulating a transmission signal (FIG. 8, column 8 lines 15-19) referenced by De-Modulator 166, means for acquiring a preamble from said transmission signal (FIG. 8) referenced by Viterbi Decoder 180 to obtain control information, means for acquiring a header from said transmission signal (FIG. 8, column 11 lines 10-28) referenced by Overhead Extraction 182 and Viterbi Decoder 180 to obtain packet header, means for forwarding an acknowlegment to one of said plurality of said originating mobile subscriber terminals (column 12 lines 13-18) referenced by acknowledgement packets between the Central Terminal and Subscriber Terminal, said acknowledgment comprising an assignment of an orthogonal code to said one of said plurality of originating mobile subscriber terminals (FIG. 8) referenced by PN-Code Generator 174 to despreading of data inclusive of acknowledgments and association to a subscriber terminal, means for receiving a further transmission signal comprising payload data (FIG. 8) referenced by RX Antenna 150 receiving all data inclusive of payload data from subscriber terminal, means for despreading said further transmission signal by both said assigned orthogonal code and PN-code (FIG. 8) referenced by despreading by RW Code Generator 172 and PN Code Generator 174.

Yeung does not teach a timing adjustment. Gerakoulis teaches adjusting a transmission time by said timing adjustment received from said originating access port (column 2 lines 2-5, FIG. 12, column 5 lines 56-65) referenced by propagation delay established by quantified timing marks utilized to adjust timing of uplink CDMA code transmissions.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the timing adjustment of Gerakoulis to the CDMA telecommunications system of Yeung for the purpose of synchronization.

Claim 44, Yeung teaches first means for spreading by said PN-code forms a preamble, which is prepended to a packet (FIG. 7, column 11 lines 10-28) referenced by first protocol with a packet header representative of a preamble which is then spread by a PN-Code Generator 114.

Claims 51, 53, Yeung teaches a system for code division packet switching (FIG. 1, column 5 lines 32-37) referenced by use of CDMA on transmit/receive signals of the wireless network, at a destination mobile subscriber terminal (FIG. 1) referenced by Subscriber Terminal 20, said destination mobile subscriber terminal being located with a microport cell of a terrestrial wireless network at a given instant of time (FIG. 1, FIG 5A) referenced by microport Central Terminal 10 in control of a terrestrial wireless Cell 16 where Subscriber Terminal 20 is presently located, where said network interfaces with a destination access radio port (FIG. 1) referenced by Central Terminal 10, comprising means for transmitting an acknowledgment to said destination access radio port (column 12 lines 13-18) referenced by acknowledgement packets between the Central Terminal and Subscriber Terminal, means for receiving twice-spread payload data (FIG. 8) referenced by RX Antenna 150 receiving data which is twice spread as indicated by despreading performed by RW Code Generator 172 and PN Code Generator 174,

means for dispreading said payload data using a uniquely assigned orthogonal code and a PN-Code (FIG. 8) referenced by despreading using RW Code Generator 172 and PN Code Generator 174, and means for decoding said despread payload data (FIG. 8) referenced by Viterbi Decoder 180. Yeung does not teach paging channels. Gerakoulis teaches monitoring a paging channel for paging messages indicating that there is payload data for said destination mobile subscriber terminal (FIG. 4, column 4 lines 5-13, column 9 lines 21-31) referenced by the signaling messages carried by the paging channel which must be continually monitored enabling subscriber unit to access channel for data, means for receiving a paging message via said paging channel (FIG. 2) referenced by Subscriber Unit 203 with Sync & Paging Receiver Unit 231. Gerakoulis teaches a means for monitoring is accomplished by monitoring said paging channel using an arbitrary orthogonal code (FIG. 3, column 5 lines 36-47) referenced by Call Control Unit 212 receiving Sync & Paging Receiver Unit 231 and application of spreading codes via TCRU 232 arbitrarily assigns an orthogonal code to the paging channel.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the paging channel of Gerakoulis to the CDMA telecommunications system of Yeung for the purpose of signaling control.

Claim 52, Yeung teaches means for presenting said payload data to a user (FIG. 8) referenced by handset unit 192.

Claim 54, Yeung teaches said acknowlegment comprises an assignment of a unique orthogonal code (FIG. 8column 12 lines 13-18) referenced by acknowledgement packets between the Central Terminal and Subscriber Terminal with acknowlegment packet spread by PN Code Generator 174 for unique orthogonal code.

Claim 55, Yeung teaches means for switching by said destination mobile subscriber terminal to said uniquely assigned orthogonal code before despreading said twice-spread payload data (FIG. 8) referenced by Correlator 178 which switches based on RW Code or PN Code.

4. Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeung and Dabak as applied to claims 57, 58 above, and further in view of Gerakoulis. Yeung and Dabak teaches a CDMA terrestrial wireless network using Viterbi decoding. They do not teach synchronization to a reference time maintained at a radio port. Gerakoulis teaches synchronization is made to a standard reference time maintained by said destination access radio port (FIG. 1 column 1 lines 50-60) referenced by Ground Radio Station 102-1 synchronized to a standard satellite time reference.
It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate time synchronization as suggested by Gerakoulis to the CDMA

telecommunications system of Yeung and Dabak for the purpose correcting propagation delay within CDMA transmissions.

5. Claims 39, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeung and Gerakoulis as applied to claims 36-38, 40, 44, 46-48, 51-55, 67 above, and further in view of Wei.

Claims 39, 42, Yeung and Gerakoulis teach a CDMA telecommunications system with timing mark synchronization. They do not teach the use of Hadamard orthogonal codes. Wei teaches the orthogonal code is a Hadamard code (page 2 paragraph 0019) referenced by the Walsh codes generated using a Hadamard matrix.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a Walsh-Hadamard code generator suggested by Wei in place of the Radermacher-Walsh code generator of the synchronized CDMA telecommunications system of Yeung and Gerakoulis for the purpose of large area synchronization of CDMA transmissions.

6. Claims 41, 43, 45, 49, 56, 61-66, 69, are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeung and Gerakoulis as applied to claims 36-38, 40, 44, 46-48, 51-55, 67 above, and further in view of Ziv.

Claims 41, 43, Yeung and Gerakoulis teach a CDMA telecommunications system with timing mark synchronization. They do not teach an ATM network nor means for creating ATM packets. Ziv teaches a means for creating an ATM packet (FIG. 2) referenced by ATM Network Interface 208, means for forwarding said ATM packet through said network via an access node (FIG. 2) referenced by access node of Base Station Controller 250 which forwards the ATM packet to an ATM network.
It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an ATM access node as suggested by Ziv to the synchronized CDMA telecommunications system of Yeung and Gerakoulis for the dual network connections via ATM packet network or traditional wire-based telephone connection.

Claim 45, Yeung teaches a means for releasing said assignment of said orthogonal code (column 3 line 67, column 4 lines 1-3) referenced by the number of subscribers serviced exceeds the number of telecommunications links which indicates link codes must be released for re-use in support of service for other subscribers.

Claim 49, 56, 61, 64, 69, Yeung teaches a system for code division packet switching (FIG. 1, column 5 lines 32-37) referenced by use of CDMA on transmit/receive signals

of the wireless network, at a destination access radio port of a terrestrial wireless network (FIG. 5A) referenced by the Central Terminals 10, where said destination access radio port interfaces with a plurality of destination mobile subscriber terminals (FIG. 1) referenced by Central Terminals 10 interfacing with Subscriber Terminals 20, located within a microport cell of said terrestrial wireless network (FIG. 1) referenced by Cell 16, means for receiving an acknowledgment from said one of said plurality of destination mobile subscriber terminals (column 12 lines 13-18) referenced by acknowledgement packets between the Central Terminal and Subscriber Terminal, means for transmitting said spread payload data to said one of said plurality of destination mobile subscriber terminals (FIG. 7, column 7 lines 51-56) referenced by TX Antenna 142 of a Central Terminal transmitting all data inclusive of payload data to a subscriber terminal. Yeung teaches a means for receiving a packet-switched transmission signal from an access node via a network (FIG. 1, FIG. 10) referenced by Central Terminals 20 sending/receiving packets over the network 18, means for assigning a unique orthogonal code to one of said plurality of said destination mobile subscriber terminals (FIG. 7, column 6 lines 60-67, column 7 lines 1-6, lines 24-33) referenced by the use of Rademacher-Walsh orthogonal codes to spread multiple user signals, means for spreading payload data destined for said one of said plurality of destination mobile subscriber terminals using both said uniquely assigned orthogonal code and a PN-code (FIG. 7, column 7 lines 61-65) referenced by spreading using RW Code Generator 112 and PN Code Generator 114, means for receiving an acknowledgment from one of said plurality of said destination mobile subscriber

terminals (FIG. 1, column 12 lines 13-18) referenced by acknowledgement packets sent between the Central Terminal 10 and Subscriber Terminals 20, means for modulating said twice-spread payload data (FIG. 7) referenced by Modulator 122 modulating the twice spread signal from Spreader 116, and means for transmitting said twice-spread payload data over air to said one of said plurality of said destination mobile subscriber terminals (FIG. 1) referenced by transmission over air interface in cell 16 between the Central Terminal 10 and Subscriber Terminals 20.

Yeung teaches a means for spreading by said originating mobile subscriber terminal a transmission signal by a PN-code assigned to an intended receiving port (FIG. 7) referenced by PN Code Generator 114, means for inserting by said originating mobile subscriber terminal an identifier of a few bits for identifying a user (column 6 lines 65-67, column 7 lines 1-9) referenced by user signals associated to subscriber links via symbols represented by 2 data bits, means for modulating by said originating mobile subscriber terminal said PN-code spread transmission (FIG. 7) referenced by Modulator 122, means for forwarding by said originating mobile subscriber terminal said modulated PN-code spread transmission signal and marking the time origin of said forwarding (FIG. 7, column 22 lines 13-14) referenced by TX Antenna 142 and by the event administrator for time marking of the events, means for demodulating by said originating access radio port said modulated PN-code spread transmission signal (FIG. 8) referenced by De-Modulator 166, means for acquiring by said originating access radio port a preamble from said transmitted signal (FIG. 8) referenced by Viterbi decoder 180, means for despreading by said originating access radio port a header from said

transmitted signal (FIG. 8) referenced by Overhead Extraction unit 182 after dispreading by PN Code Generator 174, means for forwarding by said originating access radio port an acknowledgment to one of said plurality of said originating mobile subscriber terminals said acknowledgment comprising an assignment of an orthogonal code to said one of said plurality of originating mobile subscriber terminals (FIG. 1, FIG. 7, column 12 lines 13-18) referenced by acknowledgement packets between Central Terminals 10 and Subscriber Terminals 20 wherein the packets must be processed by PN Code Generator 114, means for receiving by said originating mobile subscriber terminal said acknowledgment within a time-out period from said originating access radio port (column 17 lines 20-43) referenced by acknowledgment with a timeout period, means for spreading by said originating mobile subscriber terminal a payload data signal by said assigned orthogonal code (FIG. 7, FIG. 13) referenced by payload Record 273 which is data spread by assigned PN Code Generator 114, means for forwarding by said originating mobile subscriber terminal said modulated twice-spread payload data signal to said originating access radio port (FIG. 7) referenced by TX Antenna 142 for forwarding of twice spread RW Code Generator 112 and PN Code Generator 114 data, means for receiving by said originating access radio port a further transmission signal comprising payload data (FIG. 8, column 8 lines 15-19) referenced by Central Terminal 10 receiving payload data at RX Antenna 150, means for despreading said further transmission signal by both said assigned orthogonal code and said PN-code (FIG. 8) referenced by RW Code Generator 172 and PN Code Generator 174, means for transmitting by said destination mobile subscriber terminal an

acknowledgment to said destination access radio port (column 16 lines 55-59, column 17 lines 20-43) referenced by acknowledgment messages between Central Terminals and Subscriber Terminals, means for receiving by said destination access radio port said acknowledgment from said one of said plurality of destination mobile subscriber terminals (column 16 lines 55-59, column 17 lines 20-43) referenced by acknowledgment messages between Central Terminals and Subscriber Terminals, means for transmitting by said destination access radio port said twice-spread payload data to said one of said plurality of destination mobile subscriber terminals (FIG. 1, FIG. 7) referenced by TX Antenna 142 transmission from the Central Terminal 10 to the Subscriber Terminals 20, means for receiving by said destination mobile subscriber terminal said twice-spread payload data (FIG. 8) referenced by RX Antenna 150 receiving twice-spread data, means for dispreading by said destination mobile subscriber terminal said payload data using said uniquely assigned orthogonal code and said PN-code (FIG. 8) referenced by Correlator 178 despreading using RW Code Generator 172 and PN Code Generator 174, means for decoding by said destination mobile subscriber terminal said despread payload data (FIG. 8) referenced by Viterbi decoder.

Yeung teaches means for despreading by said originating access radio port said further transmission signal by both said assigned orthogonal code and said PN-code (FIG. 1, FIG. 8, column 15-19) referenced by despreading using RW Code Generator 172 and PN Code Generator 174 and subsequent transmission by the CT to the network, means for receiving by said destination radio access port said packet switch transmission

signal from an access node via a network (FIG. 1, FIG. 9) referenced by Central Terminal's Tributary Unit 74 which connects to the Network 18 for transmitting/receving messages, means for assigning by said destination access radio port a unique orthogonal code to one of said plurality of said destination mobile subscriber terminals (column 6 lines 55-67, column 7 lines 1-9) referenced by CDMA encoding of user baseband signals for each subscriber link, means for spreading by said destination access radio port payload data destined for said one of said plurality of destination mobile subscriber terminals using both said uniquely assigned orthogonal code and a PN-code (FIG. 1, FIG. 7, column 7 lines 52-56) referenced by the TX Antenna 142 transmission by the Central Terminal 10 to the Subscriber Terminal 20 of data spread by orthogonal codes RW Code Generator 112 and PN Code Generator114, means for transmitting by said destination access radio port said twice-spread payload data over air to said one of said plurality of destination mobile subscriber terminals (FIG. 1) referenced by Central Terminal 10 transmission to Subscriber Terminal 20 over the air. Yeung teaches a means for spreading by said originating mobile subscriber terminal a preamble and a header signal by a PN-code assigned to an intended receiving port (FIG. 7, column 11 lines 10-28) referenced by Convolutional Encoder 110 to obtain control information representative of a preamble and Overhead Insertion 108 representative of a header, which is subsequently spread by PN Code Generator 114. Gerakoulis teaches transmitting a paging message to one of said plurality of destination mobile subscribers over a paging channel indicating that there is payload data for said one of said plurality of destination mobile subscriber terminals (FIG. 4, column 4 lines 5-

13, column 9 lines 21-31) referenced by the paging channel enabling subscriber unit to access channel for data. Gerakoulis teaches a means for forwarding a paging message via a paging channel to one of said plurality of said destination mobile subscriber terminals (FIG. 4, column 4 lines 5-13, column 9 lines 21-31) referenced by the paging channel enabling subscriber unit to access channel for data.

Gerakoulis teaches forwarding by said originating access radio port to one of said plurality of said originating mobile subscriber terminals a timing adjustment (column 2 lines 2-10) referenced by the use of timing marks to adjust the timing of subsequent uplink CDMA code chips, means for adjusting by said originating mobile subscriber terminal a transmission time by said timing adjustment received from said originating radio access port (FIG. 19, column 5 lines 56-65) referenced by the use of timing marks to adjust the timing of subsequent uplink CDMA code chips, means for monitoring by a destination mobile subscriber terminal a paging channel for paging messages indicating that there is payload data for said destination mobile subscriber terminal (FIG. 4, column 4 lines 5-13, column 9 lines 21-31) referenced by the signaling messages carried by the paging channel which must be continually monitored enabling subscriber unit to access channel for data, means for transmitting by a destination access radio port said paging message to a destination mobile subscriber terminal over said paging channel indicating that there is payload data for one of said plurality of destination mobile subscriber terminals (Fig. 2) referenced by Downlink Paging Channel from radio access port Satellite Unit Transceiver 203 to Subscriber Unit Receiver 203, means for receiving by said destination mobile subscriber terminal said paging message via said

paging channel (Fig. 2) referenced by Downlink Paging Channel to Subscriber Unit Receiver 203.

Yeung and Gerakoulis not teach an ATM packet network.

Ziv teaches a means for spreading said payload data extracted from an ATM packet with a uniquely assigned orthogonal code (FIG. 2, page 2 paragraph 0016) referenced by ATM Network Interface 208 to receive ATM packets and RF links operating with CDMA spread spectrum protocols for uniquely assigned codes.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an ATM access node as suggested by Ziv to the synchronized CDMA telecommunications system of Yeung and Gerakoulis for the dual network connections via ATM packet network or traditional wire-based telephone connection.

Claim 62, 65, Yeung teaches presenting by said destination mobile subscriber terminal said payload data to a user (FIG. 8) referenced by destination Subscriber Terminal 20 audio transmission to telephone 192.

Claim 63, 66, Yeung teaches a means for spreading by said PN-code forms a preamble which is prepended to a packet (FIG. 7, column 11 lines 10-28) referenced by first protocol with a packet header representative of a preamble which is then spread by a PN-Code Generator 114.

Allowable Subject Matter

7. Claims 50, 68, 70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L Shew whose telephone number is 703-305-8708. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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